

Critical Commentary on "Evaluation of in vitro antioxidative and protective effects of kefir on cyclophosphamide-upon oxidative stress and lung damage in rats**Seda ÇETİN^{*1}**¹Adıyaman University, Faculty of Medicine, Department of Anatomy, Adıyaman, Turkey
Seda Çetin, ORCID No: 0000-0003-1952-4587**ARTICLE
INFO****ABSTRACT**Received: 20.07.2025
Accepted: 18.08.2025**Keywords**kefir, oxidative stress,
cyclophosphamide, rat*** Corresponding
Author**

sedulu@outlook.com

I read with great interest and attention article titled "Evaluation of in vitro antioxidant and protective effects of kefir on cyclophosphamide-upon oxidative stress and lung damage in rats" by Yıldız et al., which was published in the 5th volume 1st issue of Bingöl University Health Journal in 2024. In this letter, I would like to state that the protective effects of kefir on oxidative stress and tissue damage were successfully demonstrated in the study. However, the fact that only TOS, TAS and histopathological scoring analyses were performed in the study may be a limitation in terms of supporting the findings at the mechanism level. In order to increase the scientific rigor of the study, it may be suggested to add more detailed biochemical and molecular level analyses for antioxidant defense system (e.g. SOD, CAT, GPx activities) or inflammation markers in the future.

I would like to thank the authors for their valuable contributions and look forward to future developments in this field.

"Kefirin siklofosfamid-oksidatif stres ve sıçanlarda akciğer hasarı üzerine in vitro antioksidan ve koruyucu etkilerinin değerlendirilmesi" üzerine eleştirel yorum**MAKALE
BİLGİSİ****ÖZ**Geliş : 20.07.2025
Kabul : 18.08.2025**Anahtar Kelimeler**kefir, oksidatif stres,
siklofosfamid, rat*** Sorumlu Yazar**

sedulu@outlook.com

Yıldız ve ark.'nın Bingöl Üniversitesi Sağlık Dergisi'nin 2024 yılında 5. cilt 1. sayısında yayımlanan "Kefirin sıçanlarda oksidatif stres ve akciğer hasarı üzerine siklofosfamid üzerine in vitro antioksidan ve koruyucu etkilerinin değerlendirilmesi" başlıklı makalesini büyük bir ilgi ve dikkatle okudum. Bu yazıda, çalışmada kefirin oksidatif stres ve doku hasarı üzerindeki koruyucu etkilerinin başarıyla gösterildiğini belirtmek istiyorum. Ancak çalışmada yalnızca TOS, TAS ve histopatolojik puanlama analizlerinin yapılmış olması, bulguların mekanizma düzeyinde desteklenmesi açısından bir sınırlama olabilir. Çalışmanın bilimsel titizliğini artırmak için gelecekte antioksidan savunma sistemi (örn. SOD, CAT, GPx aktiviteleri) veya inflamasyon belirteçleri için daha ayrıntılı biyokimyasal ve moleküler düzeyde analizlerin eklenmesi önerilebilir.

Yazarlara değerli katkılarından dolayı teşekkür etmek ve bu alandaki gelecekteki gelişmeleri sabırsızlıkla beklemek istiyorum.

Dear Editor,

I have been following your published studies in Bingöl University Health Journal with interest. The research in your journal makes significant contributions to academic developments in the field of health sciences and guides me as well as many researchers and academics.

I found the research article titled "Evaluation of in vitro antioxidant and protective effects of kefir on cyclophosphamide-upon oxidative stress and lung damage in rats" by Yıldız et al., published in the 5th Volume, 1st Issue of the "Bingöl University Health Journal" in 2024, to be quite impressive from a scientific perspective (1). I would like to share some of the strengths that caught my attention in your study, Yıldız et al.

I have noticed that there has been an increase in current research on kefir in recent years. Kefir is examined in a wide range of parameters including liver function tests, lipid profile, glycemic parameters, anthropometric measurements, blood pressure and oxidative stress parameters (2). It has been reported that kefir positively modulates intestinal microflora, reduces inflammation and improves liver function. It may be quite promising for the treatment of metabolic disorders (3).

It has been documented by studies in the literature that TOS, TAS and MDA measurements are important parameters in the evaluation of oxidative stress levels (1,2,4). Yıldız et al. (1) examined the TOS and TAS parameters that give a general idea about the oxidant-antioxidant balance. However, although histopathological scoring was also performed in their study, including MDA measurement, which is a more sensitive indicator of oxidative damage at the cellular level, could have made the results more comprehensive and powerful. In fact, comparisons could be made with the previous study by Taheur et al. (4), who reported that kefir significantly reduced MDA levels. Supporting literature findings is an important element that can increase the scientific level of the study. Mohammadi et al. (2) examined the effects of kefir supplementation in humans; however, the decrease in MDA levels in their study was not found to be statistically significant. While animal studies have shown that oxidative stress decreases, the fact that no significant results were obtained in human studies indicates that new studies are needed in this area. Mohammadi et al. also stated in their article that the current findings in this field are limited and not definitive. It is clear that more comprehensive future research needs to be conducted to eliminate this uncertainty in the literature and to reach more definitive results.

It should be noted that the subject of the study was constructed successfully. Demonstrating the antitumor and antioxidant effects of kefir through the alleviation of tissue damage caused by Cyclophosphamide, a chemotherapy agent, is an important contribution of the study. The potential of kefir to reduce chemotherapy-induced tissue damage seems promising. However, advanced, controlled clinical studies are needed to confirm these protective effects. In addition, by adding additional analyses such as MDA, antioxidant enzyme activities (SOD, CAT, GPx), and inflammation markers; the study content could have been enriched and the study could have gone beyond showing general protection and provided strong scientific evidence at the cellular and molecular level.

KAYNAKLAR

1. Yıldız, S. Ç., Demir, C., Cengiz, M., Cengiz, B. P., & Ayhancı, A. (2024). Evaluation of in vitro antioxidative and protective effects of kefir on cyclophosphamide-upon oxidative stress and lung damage in rats. Bingöl Üniversitesi Sağlık Dergisi, 5(1), 11–18.
2. Mohammadi, F., Razmjooei, N., Mohsenpour, M. A., Nejati, M. A., Eftekhari, M. H., & Hejazi, N. (2025). The effects of kefir drink on liver aminotransferases and metabolic indicators in patients with nonalcoholic fatty liver disease: A randomized controlled trial. BMC Nutrition, 11(1), 3.
3. Akar, F., Sumlu, E., Alçıgır, M. E., Bostancı, A., & Sadi, G. (2021). Potential mechanistic pathways underlying intestinal and hepatic effects of kefir in high-fructose-fed rats. Food Research International, 143, 110287. <https://doi.org/10.1016/j.foodres.2021.110287>
4. Taheur, F. B., Mansour, C., Mechri, S., Skhiri, S. S., Jaouadi, B., Mzoughi, R., ... & Zouari, N. (2022). Does probiotic kefir reduce dyslipidemia, hematological disorders and oxidative stress induced by zearalenone toxicity in Wistar rats? Toxicon: X, 14, 100121.